Before The
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

1998 Biennial Regulatory Review -- Spectrum Aggregation Limits for Wireless Telecommunications Carriers	)))	WT Docket No. 98-205

COMMENTS OF BELL ATLANTIC MOBILE, INC.

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TABLE OF CONTENTS

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SUMMARY

Bell Atlantic Mobile, Inc.[1] applauds the Commission's decision to review the validity of the CMRS spectrum cap rule in light of the competitive and technological changes sweeping through wireless markets. Those changes compel one simple action in this proceeding: repeal of the rule. Neither the current cap nor alternative limits on spectrum ownership are needed to achieve Commission goals for CMRS. The Notice (at ¶ 5) declares, "trusting in the operation of market forces generally better serves the public interest than regulation." Giving more than lip service to this principle means removing a rule that at best achieves no benefits and at worst undermines Commission CMRS policy.

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1 Bell Atlantic Mobile, Inc. (BAM) is the managing general partner of Cellco Partnership, which holds or has interests in licenses to provide cellular radiotelephone service in markets located in nineteen states and the District of Columbia. The spectrum Cellco uses to provide cellular service in each market is subject to the spectrum cap at issue in this proceeding.

BAM agrees with the Notice's enunciation of the principles that should govern review of the spectrum cap, including reliance on market forces except where rules are needed to preclude the loss of a competitive market. Two other principles should also apply: First, the burden is by law on the Commission to justify this or any other rule with evidence as to why the rule is necessary to achieve tangible benefits. Second, Section 11 of the Act requires the Commission to engage in "zero-based" rulemaking. It must start from the premise of no regulation and maintain rules only when current facts supply a clear need for doing so. The spectrum cap cannot survive when it is measured against these principles.

The cap is not needed to prevent the loss of competitive CMRS markets. The cap is based on outmoded notions of spectrum scarcity. Today, there are large amounts of spectrum available for CMRS, and even more that could readily be made available. Economic analysis shows that a cap is not needed to guard against a market failure, foreclosure of competition or other competitive harm. Removing the cap will not undercut the market forces that have benefited consumers and that will preserve competition. No rational business entity would believe it could foreclose competition by aggregating spectrum, because the Commission has allocated significant new blocks of spectrum for wireless services and can allocate even more. And if any entity attempted to foreclose CMRS competition, government and private remedies under the antitrust laws would be available to squelch those attempts.

The cap is not needed to promote new entry. The other rationale for the cap was to set aside PCS spectrum for non-cellular carriers so that new entrants would obtain spectrum. That goal was achieved with the award of licenses to the PCS entrants and the resulting rapid expansion of CMRS competition. It cannot justify retaining the rule.

The cap is not needed to promote rural service. There is no data that shows how or why the presence of the spectrum cap will bring more competition or more services to rural markets. Service to sparsely populated areas is a product of smaller demand, not the presence (or absence) of an ownership limit. Keeping the cap will not force feed new competition or services into these markets, but may in fact slow the deployment of new services that would benefit rural residents.

Rather than promote competition for local or advanced services, the cap will only impair these policies. There is also no rational connection between the cap and these goals. Carriers will make investments in new technologies in response to consumers' demand for new products and carriers' own incentive to expand their revenues and distinguish themselves in the marketplace. A cap on spectrum will if anything discourage investment in the new spectrum-intensive technologies that wireless providers must deploy if they are to offer competitive services, such as local telephony, Internet access, and data services. In driving to compete and serve their customers, wireless carriers will be hobbled, not benefited, by a limit on the amount of spectrum they need to deploy new services. The current rule distorts the market

for spectrum, undercuts the goal of convergence of different services, and discriminates against certain CMRS providers, because it applies a restraint only against some but not all competitors, and only on some but not all spectrum.

No alternative caps are justified. The Commission should simply repeal rather than tinker with the spectrum cap. No different level of a cap or changes to the many complex attribution rules that the current rule employs will achieve any of the policies the Notice identifies. It will, however, disserve the goal of allowing wireless carriers flexibility to deploy spectrum-intensive services that will enable them to enter and compete in landline markets.

I. THE COMMISSION MUST PROVE THAT MAINTAINING A CAP IS NECESSARY TO ACHIEVE ITS GOALS FOR CMRS.

At the outset, the Commission should define and then apply the correct legal standard to its reevaluation of the CMRS spectrum cap. The Commission proceeds through three steps in considering CMRS regulation:

(1) Identify the specific goals that are to be achieved.

(2) Explain how the rule will achieve those goals.

(3) Explain why the rule is the least restrictive means of doing so.

It is not enough for a rule merely to be a means to achieve particular ends; it must also be the minimum necessary to accomplish those ends. As the Notice recognizes (at ¶ 5), showing that a rule would promote a specific policy is insufficient: "Even in those situations, the Commission should endeavor to craft narrowly any regulation

to impose only the minimum restraint on the market necessary to achieve the public interest."

The Commission has the burden to establish a compelling evidentiary basis that each step of this three-part analysis is met. In the 1993 amendments to Section 332 of the Act, Congress imposed a framework that relies on competition rather than government intrusion to achieve public interest goals.[2] In its first decision implementing those amendments, the FCC proclaimed, "We establish, as a principal objective, the goal of ensuring that unwarranted regulatory burdens are not imposed upon any mobile radio licensees that are classified as CMRS providers."[3] The Commission later affirmed that it bore the burden to justify any regulation as nonetheless consistent with the federal deregulatory paradigm:

> In 1993, Congress amended the Communications Act to revise fundamentally the statutory system of licensing and regulating wireless (i.e., radio) telecommunications services. ... OBRA reflects a general preference in favor of reliance on market forces rather than regulation. Section 332(c), for example, empowers the Commission to reduce CMRS regulation, and it places on us the burden of demonstrating that continued regulation will promote competitive market conditions. ... Congress delineated its preference for allowing this emerging market to develop

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2 Omnibus Budget Reconciliation act of 1993, Pub. L. No. 103-66, § 6002(b) (1993) (OBRA).

3 Implementation of Section 3(n) and 332 of the Communications Act, Second Report and Order, 9 FCC Rcd 1411, 1418 (1994).

subject to only as much regulation for which the Commission and the states could demonstrate a clear cut need.[4]

The 1996 Act reaffirmed Congress's specific deregulatory mandate for CMRS and extended that mandate to other services.[5] Thus as a matter of law, proponents of deregulation do not have the burden to show why repeal of the spectrum cap is necessary; rather, the Commission must show why the cap is essential to achieve the goals the Notice sets forth.[6]

The fact that the Commission is considering whether to retain a rule already in place, rather to impose a new rule, does not alter the required analysis. This proceeding is being conducted pursuant to the biennial regulatory review mandated by Section 11 of the Act. Section 11 mandates "zero-based" rulemaking, which requires the Commission to start from the premise that no regulation of markets is

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4 Petition of the Connecticut Department of Public Utility Control to Retain Regulatory Control of the Rates of Wholesale Cellular Service Providers, Order, 10 FCC Rcd 7025, 7031 (1995), aff'd, 78 F.3d 351 (2d Cir. 1996).

5 Telecommunications Act of 1996, Pub. L. No. 104-104 (1996). The 1996 Act establishes "a pro-competitive, de-regulatory national policy framework" that is intended to "promote competition and reduce regulation ..." S. Conf. Rep. No. 230, 104th Cong., 1st Sess. 1 (1996).

6 As Commissioner Powell stated in his Separate Statement to the Notice: "I believe the burden should be on us, the FCC, to re-assess and re-validate the rule ... . We must be prepared, if this is what the record evidence shows, to make a compelling and convincing case that the rule must be kept. If we cannot, or if the evidence in support of the rule is lacking, we must modify or eliminate it and rely on competitive market forces or other mechanisms, such as the antitrust laws."

appropriate, unless and until a current and clear rationale can be shown for government to intervene. A rule cannot be maintained based on facts that may have justified the rule at the time it was adopted. Rather, the Commission must start with the clean slate that "trusting in the operation of market forces generally better serves the public interest than regulation." Notice at ¶ 5. It must develop a record of current facts that looks forward, not back, to supply the requisite basis for imposing regulation. It must then limit any regulation to the minimum intrusion into the market that is needed to achieve the stated goals.[7]

The Notice (at ¶ 5) identifies four discrete principles to consider:

> (1) Preventing "market failure" in CMRS markets by precluding one competitor from acquiring so much spectrum that competition will be undermined.
>
> (2) Fostering competition in all telecommunications markets, including ensuring "there are no regulatory impediments to the evolution of wireless carriers into more effective competitors vis-à-vis the local wireline telephone companies."
>
> (3) Securing the benefits of wireless and other services "for all areas of our Nation."

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[7] In another rulemaking, the Commission explained its duty to prove a clear need for any CMRS rule: "The resale rule, like all regulations, necessarily implicates costs, including administrative costs, which should not be imposed unless clearly warranted. We therefore conclude that our resale rule should be narrowly tailored to apply only to those services where, due to competitive conditions, its application will confer important benefits, and only for so long as competitive conditions continue to render application of the resale rule necessary." Equal Access and Interconnection Obligations Pertaining to Commercial Mobile Radio Services, First Report and Order, 11 FCC Rcd 18455, ¶17 (1996) (emphasis added).

(4) Promoting "the introduction of innovative services and technological advances."

A spectrum cap is not necessary to achieve any of these objectives, but may actually obstruct achieving them. Whether in its current form or modified in any of the ways identified in the Notice, the spectrum cap is thus not lawful regulation.

II. A SPECTRUM CAP IS NOT NEEDED TO GUARD AGAINST A CMRS MARKET FAILURE.

A. Market Forces Protect Competition.

One of the stated purposes of the CMRS spectrum cap was to protect against market failure through the loss of competition. The Commission asserted that a 45 MHz cap would prevent one carrier from acquiring sufficient spectrum to be in a position to exert market power or to engage in anti-competitive conduct. It asks for comment on belief that "the spectrum cap has served the purpose of constraining undesirable erosion of existing competition through mergers or acquisitions in major markets." Notice at ¶ 37.

The correct issue, however, is not whether the cap would preclude some erosion in the number of competitors, because there is no magic number of CMRS competitors any more than there is a "right" number of competitors in the wireless handset industry or any other business. Rather, the issue is whether the cap is necessary to avoid the loss of competition. Federal policy does not attempt to predetermine some ideal number of competitors, but instead relies on free markets,

supplemented by more narrowly tailored safeguards and remedies, to prevent the acquisition of market power that can lead to market failure. There is no plausible basis for treating CMRS any differently.

In addition, the Commission has often found that markets minimize the potential for any carrier to acquire or exercise market power, because any attempt to do so would be disciplined by the responses of competitors. The Commission has repealed rules where it finds that competitive conditions minimize the potential for engaging in unreasonable or discriminatory conduct.[8] Given that competitive conditions also exist in the CMRS industry, as detailed below, continuing to restrict CMRS ownership cannot be squared with that precedent.

B. Economic Analysis Shows A Spectrum Cap is Not Needed to Safeguard CMRS Competition.

In a Declaration attached to these Comments which evaluates the spectrum cap, economists Robert W. Crandall and Robert H. Gertner[9] conclude:

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8 E.g., Policy and Rules Concerning the Interstate, Interexchange Marketplace, First Report and Order, 11 FCC Rcd 1199, 1207 (1996) (eliminating tariff rules for interexchange carriers based on finding that "market forces" will "generally ensure" that carriers' rates and practices are just and reasonable); Hyperion Telecommunications, Inc., 12 FCC Rcd 8596 (1997) (eliminating other tariff obligations based on finding that competition effectively disciplines anti-competitive conduct).

9 Dr. Crandall is Senior Fellow in Economics Studies at the Brookings Institution. He has served as a consultant on regulatory and antitrust matters to the Commission, the Department of Justice and other agencies.

(continued...)

> We believe that there is no economic basis for such a policy, and that the Commission's current spectrum cap likely reduces consumer welfare. ... [T]here is no basis for concern that eliminating the cap will lead to a reduction in competition.

Decl. at ¶¶ 12-13. The empirical data and analyses they supply undercut any competition-based rationale for maintaining a limit on spectrum ownership.

Drs. Crandall and Gertner note that there are two economic concerns that may be advanced to justify a cap, market foreclosure and coordinated interaction, but conclude that both concerns are unfounded. Decl. at ¶ 37.

Market foreclosure. Drs. Crandall and Gertner find that suppression of competition in this manner is unlikely because large amounts of spectrum will remain for competitors, even if one or more firms acquire more than 45 MHz of spectrum in an area. Decl. at ¶ 37. The Commission has steadily increased the amount of spectrum available for CMRS. When the cap was imposed, only 50 MHz of spectrum was licensed (for cellular). Since that time, the amount of spectrum has tripled to approximately 180 MHz for cellular, PCS and SMR services. Decl. at ¶ 19. Furthermore, the effective capacity of that spectrum has increased because of the deployment of CDMA and other digital technologies that make more efficient the use of any given set of frequencies. Id. A new wireless firm can compete effectively with 10 MHz of spectrum; many are already doing so. Decl. at ¶¶ 22-24.

(...continued)

> Dr. Gertner is Professor of Economics and Strategy at the Graduate School of Business at the University of Chicago. Decl. at ¶¶ 1-10.

This means that, even if one carrier were to amass 60 MHz, "the remaining 120 MHz of spectrum could support a substantial number of effective competitors, each with sufficient capacity to serve a large fraction of the market." Decl. at ¶ 38.

If, in the future, some firms begin to acquire so much spectrum in any market as to raise concerns about potential market foreclosure, Drs. Crandall and Gertner explain that "the Commission can increase spectrum for CMRS and others can move spectrum to CMRS uses, thereby thwarting any attempt at foreclosure." Decl. at ¶ 39. They observe that the amount of spectrum available for mobile services could increase substantially by reallocating frequencies. Decl. at ¶¶ 49, 62.

The point that the erosion of a competitive CMRS market can be avoided by infusions of new spectrum is confirmed by Dr. Charles L. Jackson in his Declaration attached to these Comments.[10] He reviews the many alternative blocks of spectrum that could be reallocated to CMRS and licensed to meet the growing need for mobile data communications such as Internet access.

Dr. Jackson identifies a total of 472 MHz in bands that are suitable for mobile use. Decl. at ¶ 36. For example, he observes that one possible source of more CMRS spectrum is the 186 MHz of spectrum currently allocated for the

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10 Dr. Jackson is adjunct professor of electrical engineering and computer science at George Washington University, where he teaches a course in mobile communications. He has held staff engineering positions in Congress and at the Commission and has worked for more than twenty years in the electronics and communications industry. Decl. at ¶ 1.

MMDS (wireless cable) service, which is underutilized. The Commission has recently made more than five time more radio spectrum available for wireless cable-type operations in the LMDS band that would enable freeing up much of the MMDS band. Decl. at ¶¶ 31-32. He also identifies the 105 MHz of spectrum used for the broadcast auxiliary service, much of which could be provided in higher frequency bands; the 36 MHz to be freed for uses other than public safety applications once televisions stations are moved out of channels 60-69 pursuant to the Digital Television allotment proceeding, and other potentially suitable spectrum blocks. Decl. at ¶¶ 33-36. Dr. Jackson concludes (at ¶ 37):

> There is available substantial spectrum that can be redeployed to be used for CMRS or CMRS-like services. ... Any concern about output restrictions in the CMRS industry must take into account the potential capacity provided by such spectrum. Consumers would be better served if the FCC expanded the radio spectrum available for CMRS rather than restricting the operation of CMRS firms through artificial spectrum caps.

Given the Commission's policy of making more spectrum available for CMRS when needed, and the amount of additional spectrum that could be licensed for mobile services, it would be implausible for a rational business entity to seek to acquire spectrum for the purpose of foreclosure. It would be equally implausible to presume that competition could be foreclosed by one entity holding any particular amount of spectrum. Even if a firm succeeded in foreclosing competition, as Drs. Crandall and Gertner observe, "The FCC could defeat this strategy by simply auctioning more CMRS spectrum. Such a strategy would be foolhardy to pursue

given the investments required and the ease with which it could be defeated. As a result, it is unlikely even to be attempted." Decl. at ¶ 47.

Coordinated Interaction. Drs. Crandall and Gertner also conclude that, to the extent a cap may be premised on a concern that CMRS providers might engage in coordinated interaction to suppress competition, that concern is unfounded. They base this finding on a number of factors particular to the CMRS industry, including the lack of economic incentive for new PCS entrants to engage in this conduct with established cellular firms, the different marketing strategies being deployed by competitors, the choices different CMRS carriers have made as to which products to bundle for customers, the lack of public market information, and the variation in technologies. These factors, they find, are not conducive to coordinated interaction among CMRS competitors. Decl. at ¶¶ 40-44.

C. Effective Remedies Are Available to Preserve Competition.

In addition, existing antitrust remedies remain in place as an additional effective safeguard to rectify market failure or attempted exercise of market power. These remedies provide yet another reason that the spectrum cap is superfluous. See Crandall and Gertner Decl. at ¶¶ 45-47. For example:

-- Antitrust and unfair competition statutes empower enforcement agencies to take a variety of actions against threats to competition. The Department of Justice and Federal Trade Commission have powers under the antitrust laws to stop anti-competitive conduct by CMRS providers. They can invoke multiple

remedies where conduct threatens competition, including requesting that the parties agree to certain conditions. DOJ and FTC review is selective, based on the specific facts of each case, and can tailor a remedy to address the specific problem that arises, in contrast to a rigid ownership cap, which applies in advance without regard for specific conditions.

-- Individuals and business entities can invoke an array of statutory and common law actions against any party that is believed to be injuring competition. A flat ownership limit, by contrast, would not address these situations, because they would by definition occur despite compliance with any such limit. The Commission has pointed to the availability of private remedies as a reason to repeal regulation. It should do so here as well.[11]

III. THE SPECTRUM CAP SHOULD BE REPEALED BECAUSE BECAUSE IT HAS ACHIEVED THE GOAL OF PROMOTING NEW CMRS ENTRY AND COMPETITION.

Where the rationale for an agency's rule has been achieved, the rule should no longer be retained. Agencies cannot rely on original reasons for a rule where those reasons are no longer applicable. Courts have held that agencies are under a

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11 E.g., Elimination of Unnecessary Broadcast Regulation, 59 RR 2d 1500 (1986) (repealing rules regulating market conduct by broadcast stations based on finding that private remedies were sufficient to police any misconduct). Under this precedent, the Commission cannot maintain the CMRS spectrum cap without demonstrating why these government and private remedies are inadequate to protect CMRS competition.

continuing duty to reexamine their rules to determine whether the factual premises for them remain valid and current, and must repeal or modify rules accordingly.[12] Section 11 codifies this longstanding legal principle by requiring the biennial review of all regulations and the deletion of rules that no longer serve their purpose.

In 1994, "most parts of the country received mobile voice services from two cellular providers. Thus, the purpose of the CMRS spectrum cap was to provide an expedited means of ensuring that multiple service providers would be able to obtain spectrum in each market and thus facilitate development of competitive markets for wireless carriers."[13] The cap was in short adopted to ensure that new entrants, including "designated entities," be able to acquire the new blocks of PCS and SMR spectrum. See Crandall and Gertner Decl. at ¶ 58.

The CMRS spectrum cap achieved this objective. 120 MHz of spectrum was auctioned off to hundreds of non-cellular providers. Separate auctions awarded hundreds of new SMR licenses, again largely held by non-cellular providers. The

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12 Courts have held that an agency cannot continue to adhere to rules when the original assumptions for those rules are no longer valid or have been overtaken by new facts. Geller v. FCC, 610 F.2d 973 (D.C. Cir. 1979) (reversing Commission for maintaining cable television rules after the factual premise for the rules had changed); Meredith v. FCC, 809 F.2d 863 (D.C. Cir. 1987) (reversing Commission where its findings in a later proceeding "largely undermined the legitimacy of its own rule"); Bechtel v. FCC, 957 F.2d 873 (D.C. Cir. 1992) (reversing Commission order; "it is settled law that an agency may be forced to reexamine its approach if a significant factual predicate of a prior decision has been removed.")

13 Notice at ¶ 2 (emphasis added).

PCS and SMR auctions have in turn resulted in vigorous new competition in CMRS markets. The Commission has repeatedly reported the dramatic growth in that competition. It has pointed to declining wireless prices and rapid new entry in touting the success of its policies promoting that competition, and has explicitly noted the benefits flowing to consumers.[14]

Drs. Crandall and Gertner confirm that "The Commission's goal of competition has been achieved, and the spectrum cap is not required to ensure that such competition is preserved." Decl. at ¶ 59. The rapid infusion of new spectrum has "created an industry in which competition is robust and increasing – the number of suppliers is increasing; substantial new wireless capacity is being added; and prices are falling." Decl. at ¶ 15. They make the following findings, which they conclude show why lifting the spectrum cap should not raise competition concerns:

Rapid competitive growth. There has been tremendous expansion of the number of CMRS providers. As of June 1998, more than four fifths of the nation's population were served by at least three wireless carriers, and two-thirds were served by at least four – proportions that are expected to increase. Decl. at ¶ 18.

Lack of market concentration. Drs. Crandall and Gertner find that CMRS providers can compete effectively with as little as 10 MHz, and there are many

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14 E.g., Third Annual Report on CMRS Competition, FCC 98-91, released June 11, 1998; see Remarks by Chairman Kennard to the National Association of State Utility Consumer Advocates, February 9, 1998; Remarks of Commissioner Susan Ness to the Economic Strategy Conference, March 3, 1998.

providers holding at least that amount. Decl. at ¶¶ 20-23. At least seven firms own at least 10 MHz in each MSA, and eight firms own at least that amount in half of the MSAs. "If eliminating the spectrum cap leads to some reduction in the number of owners of 10 MHz or more of spectrum in an area, a substantial number of competitors likely will remain." Decl. at ¶ 25. For this reason, they conclude that the wireless industry is not highly concentrated. Decl. at ¶ 31.

Drs. Crandall and Gertner also caution against using the Herfindahl-Herschman Index (HHI) in a dynamic industry such as CMRS. They explain that, while the departure of one CMRS provider from a market would cause an increase in the HHI, "it would be inappropriate to conclude that the measured increase in HHI reflects a reduction in competition." Decl. at ¶¶ 35-36.

Falling prices. New CMRS entrants have undercut cellular carriers' prices, inducing large price reductions from cellular firms. Decl. at ¶ 26. Of relevance to the concept of a cap is evidence that substantial competitive benefits were achieved when the first PCS competitor entered a market. Statistical analyses of cellular price data indicate that the presence of only one additional firm caused CMRS prices to fall. Decl. at ¶ 29. But comparable evidence is lacking that a second or third PCS provider lowered prices further. Id. The data indicate that the spectrum cap has already provided whatever competitive "impetus" it could provide, and that repealing it will not produce further price-lowering competition.

The Commission has recognized that initial licensing rules are not to remain in place indefinitely where they were primarily intended to promote new entry. For example, its wireline "set-aside" rule for the cellular service was limited to the initial award of cellular spectrum to promote new entry, but was not applied to subsequent license transfers.[15] Similarly, the PCS rules promoting designated entities are primarily tools to promote entry of new firms. They restrict initial applications for the C and F blocks to qualifying small businesses. Section 24.709. After the PCS buildout period, however, those blocks are free from transfer restrictions. Section 24.839. So, too, the spectrum cap should not apply once initial licenses have been awarded.

IV. RETAINING THE CAP WILL NOT BRING MORE SERVICE OR COMPETITION TO RURAL MARKETS.

The Notice (at ¶ 5) also refers to the goal of ensuring that rural areas are able "to secure the benefits of modern telecommunication services, including wireless services." Later (at ¶¶ 45-47), it specifies a narrower concern about the fewer PCS carriers that are presently in operation in some rural markets, and suggests that

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15 In James F. Rill, 60 RR 2d 583, 593-94 (1986), the Commission held that the wireline/non-wireline application eligibility requirements were only imposed to ensure entry by non-wireline competitors, and was not intended "to regulate the subsequent ownership structure of the industry."

the cap might promote construction of new systems in those markets. Neither concern merits retaining the spectrum cap.

While BAM agrees with the goal of providing rural areas with the same new telecommunications services being made available in larger parts of the Nation, it is unaware of any data showing that this is not happening. BAM has deployed service offerings throughout its footprint, which encompasses dozens of rural service areas. Moreover, Commission rules require that BAM offer specific services, such as 911, E-911, and means of access for the disabled in all of its service areas. There is no discernable need for a spectrum cap to achieve the goal of nationwide availability of telecommunications services.

To the extent the Notice is more narrowly concerned with the uneven number of CMRS competitors across urban and rural areas, this again is not a situation that bears any cause-and-effect relationship to the CMRS spectrum cap.

First, it is hardly surprising that CMRS carriers are deploying their networks first in urban areas where they can quickly generate the revenues they need to fund their network deployment in rural areas. Given that CMRS licenses were awarded based on geographically defined markets, which have widely varying populations, it should be expected that within the five-year buildout period adopted by the Commission, competitors will enter first in urban areas with larger numbers and concentrations of potential subscribers. The fact that there may be three PCS and SMR competitors in urban markets, but only one in some rural markets, is a matter

of timing. This will not be changed by maintaining or repealing the spectrum cap. Were the cap truly effective in causing more competitors to build out systems in rural markets, the current unevenness would not exist. The mere fact that the Commission expresses concern about this situation shows why the spectrum cap (which has been in effect for over four years) is not a useful vehicle to achieve it.

Second, the Notice confuses the number of competitors with competition. It incorrectly assumes that one determines the other. BAM is engaged in vigorous competition with other CMRS providers in each of its markets even those where no PCS carrier has yet commenced service. BAM and AT&T Wireless, for example, offer their "OneRate" or "SingleRate" price plans to their subscribers in both urban and rural markets. Data submitted by Drs. Crandall and Gertner show that the multi-competitor CMRS market is not confined to large urban areas. They observe that, given lower demand for CMRS in rural areas, "the likelihood of foreclosure is especially remote." Decl. at ¶ 39. For this reason as well, maintaining the cap cannot be shown to lead to more competition in rural markets. It is the availability of large amounts of CMRS spectrum, and the potential for entry using existing or new blocks of CMRS spectrum, which ensures competition, not a cap.

Third, maintaining the cap could impede CMRS providers' efforts to bring competitive new services to rural areas, particularly those requiring new infrastructure, switch upgrades, or other up-front investment. Drs. Crandall and Gertner note that new services "are typically developed in high density areas where

companies can rapidly amortize their investments and then deployed throughout the network. A spectrum constraint in high density areas lowers the return, and thus the incentives, to developing new services which would otherwise benefit the entire nation, including lower density rural areas." Decl. at ¶ 62.

V. THE SPECTRUM CAP WILL IMPAIR, NOT FOSTER, WIRELESS-LANDLINE COMPETITION AND THE DEPLOYMENT OF NEW SERVICES.

A. The Cap Will Not Achieve These Goals.

The Notice identifies two other principles of CMRS regulation as relevant to reassessing the spectrum cap rule: to encourage "convergence" between different technologies, in which wireless providers offer services in competition with landline carriers, and to promote the deployment of advanced technologies to serve the public. The CMRS spectrum cap was, however, not adopted based on any findings that it would promote wireless-landline competition or deployment of new services. These policies were not mentioned as reasons for the rule, nor is there any plausible basis today for linking these goals to such a limit.

Without evidence of a cause-and-effect relationship between a cap and these objectives, the cap cannot be maintained on these grounds. Without evidence of that relationship, in turn, the Commission cannot even reach the issue of whether the cap would be the "minimum restraint on the market necessary" to achieve these objectives, the other condition that must be met before a cap can be maintained.

Notice at ¶ 5. Because the cap cannot meet the prerequisites to imposing CMRS regulation (see Section I of these Comments), it cannot survive.

B. Continuing The Cap Risks Impairing These Goals By Constraining CMRS Carriers' Ability To Meet Growing Demand for Non-Voice Mobile Services.

BAM fully agrees with the principles of encouraging new competition with landline services and deploying advanced technologies. Convergence of wireless and landline services benefits competition in telecommunications markets, and offers persons access to a broader array of options to meet their communications needs. That convergence depends in turn on wireless carriers' ability to have access to the radio spectrum that will enable them to build their business.

Rather than help to achieve those goals, the cap risks undermining them. In order to offer the kinds of new broadband services that will attract consumers of conventional wireless and landline services, CMRS carriers need more spectrum, not a limit on the amount of spectrum they can acquire. To the extent the cap restricts CMRS providers' ability to acquire the spectrum they need to compete effectively, it will impair them from doing precisely what the Commission wants them to do: enter new markets and offer advanced services.

1. The Demand for Mobile Data Services Is Growing Rapidly.

Dr. Jackson expects "an explosion in the use of wireless data over the next decade." Decl. at ¶ 3. Much of this use will involve mobile applications. He reports

on the interest in "nomadicity" (the use of networked computers by individuals roaming from location to location), the growth in wireless Internet access, the development of "Third Generation" mobile services and equipment, and ongoing research in the United States and in other countries that is aimed at improving wireless access to data services and mobile networking. Decl. at ¶¶ 4-16.

The benefits of mobile data capacity are particularly significant for public safety communications. Dr. Jackson summarizes the 1996 report of the Commission's Public Safety Wireless Advisory Committee, which offered many visions of the public safety community's rapidly expanding needs for video and data as well as voice communications that can only be met by mobile networks:

> -- Emergency medical personnel could use mobile data capability to send diagnostic information such as electrocardiogram results from the ambulance to the nearest hospital.
>
> -- Firefighters could obtain remote access to building blueprints on the way to a fire or emergency.
>
> -- Police could transmit and receive data and graphics, including fingerprints, mug shots, vehicle license information, arrest and accident reports from remote locations.
>
> -- Patrol cars could be equipped with mobile video cameras for use in emergency situations.

Decl. at ¶¶ 18-21. Dr. Jackson concludes, "Wireless Internet access and wireless data networking delivers substantial value and will become increasingly important." Decl. at ¶ 24.

2. Broadband Mobile Services Require Significant Spectrum in the 500 MHz – 3 GHz band.

Broadband wireless services are, however, extremely spectrum-intensive. The provision of Internet services at speeds available through landline modems, for example, takes far more dedicated bandwith than most cellular or PCS carriers can dedicate in this way. Wireless carriers have had to deploy most of their spectrum to meeting the sharply increased demand for mobile voice services, leaving little spectrum available for widespread deployment of other spectrum-intensive applications. These services will require considerably more capacity than is available on existing CMRS networks. Jackson Decl. at ¶¶ 3, 16.[16] Cellular and PCS networks have been configured based on the concept of frequency reuse for short-duration communications, but that concept will not work as effectively when persons use wireless spectrum for longer-duration data communications.

The preferred spectrum for these spectrum-intensive applications is in the range of 500 MHz to 3 GHz. Decl. at ¶ 30. Dr. Jackson explains that, below 500 MHz, spectrum is less suited for portable terminals because of the need for larger antennas and the reduced ability of radio signals to penetrate buildings. Id. The

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16 Many local exchange carriers have reported substantial changes in both the times of peak usage on their network and the duration of average calls resulting from the rapidly increasing access to the Internet over landline facilities. Persons log on and stay on for far longer than they spend on a voice call. These same changes will affect wireless carriers' ability to meet the growing needs for wireless services with their existing capacity.

upper limit is set by the increased blocking of radio signals at higher frequencies by trees and buildings. While there is ongoing research on mobile use of higher frequencies, Dr. Jackson states, "Operation of terrestrial mobile communications at such high frequencies is not considered feasible today." Id. Fixed services can use higher bands because they can locate antennas to maximize line-of-sight transmissions. But this option is not feasible for a mobile network because it must be able to function anywhere and connect people that are on the move.

3. The Spectrum Cap Constrains Access to Needed Spectrum.

If CMRS providers can respond to the rapidly growing demand for broadband mobile data and Internet services, this will serve the Commission's goal to expand the benefits of wireless services to the public generally. It will also attract landline as well as wireless customers to new services, because it will enable them to access the Internet and send and receive data without being tethered to the landline telephone network, promoting the wireless-landline convergence goal.

But the spectrum cap limits these carriers from accessing large amounts of the spectrum that is currently available for providing these spectrum-intensive new services. This practical obstacle created by the cap will grow even more severe as CMRS providers seek to provide even more advanced services such as high-speed access to the Internet. The 120 MHz of spectrum licensed for PCS, for example, is completely subject to the cap. CMRS providers cannot acquire spectrum in that band if it, together with other capped spectrum they have, exceeds 45 MHz. Dr.

Jackson (like Drs. Crandall and Gertner) believes that a CMRS provider can provide conventional voice service using 10 MHz. Decl. at ¶ 27. But he notes that as CMRS comes to substitute for wireline service, "the number of subscribers that can be served falls markedly." Decl. at ¶ 28. Serving landline customers' Internet and other data needs will strain capacity even further. Id.

Dr. Jackson explains why the combination of increasing traffic on wireless networks, together with the rapid growth of spectrum-hungry wireless data services, will likely constrain CMRS providers from competing effectively without acquiring considerably more spectrum capacity. Particularly in urban areas, the intensive use of wireless networks points to development of "a major mismatch between the capacity of the capped wireless system and the total market demand." Decl. at ¶ 28. He concludes:

> The capacity of CMRS systems – even a CMRS system operating at the Commission's spectrum cap with the latest technology and small cells – is small compared with the total telecommunications demand in built-up areas. There is ample spectrum that could be used to provide CMRS services if the Commission believed that output restrictions were harming consumers. The Commission's CMRS spectrum cap does not reflect either the likely future demand for communications services or the availability of substantial additional spectrum that could be used to provide CMRS or CMRS-like services.

Decl. at ¶ 38.

Drs. Crandall and Gertner echo these concerns. They discuss in particular the goal of landline-wireless conversion, but warn that the spectrum cap may constrain CMRS in competing with wireline services, particularly for current

providers who must continue to serve their analog base. Decl. at ¶¶ 50-52. They point out that as cable television systems begin to deploy cable modem services to provide subscribers with high-speed Internet connections, "CMRS providers will have to respond with higher-bandwidth services" to compete for this business. Decl. at ¶ 54. These and other new services, however, not only require more capacity for each connection; they also demand still more capacity because average call lengths are higher. "The increased usage alone will place a strain upon the available spectrum, but the demand for increased bandwidth combined with higher usage will make the spectrum cap binding." Decl. at ¶ 53.

C. The Spectrum Cap Prevents an Efficient Spectrum Market.

Vigorous competition requires a free and open market in which competitors can decide how to compete and differentiate themselves without being constrained by lack of available resources. Spectrum is the resource wireless carriers need to offer new services. In a free market, parties would acquire the types and amounts of spectrum that they need to offer the services they want to provide. They would pay for spectrum based on its perceived value for providing those services compared to other spectrum. A manufacturer chooses between using trucks vs. railroads for transporting its products by comparing the cost and efficiency of each mode of transportation for the types of goods it sells and where it wants to sell them. A wireless provider must also decide which amounts and types of spectrum will give it

the resources it needs to serve its customers and differentiate its business in the competition for subscribers.

The spectrum cap, however, distorts the free market in spectrum by imposing external constraints on competitors' ability to use and combine different blocks of spectrum. For example, a wireless carrier may decide that PCS spectrum is the most cost-efficient and effective way to offer local loop service, but because of the cap it would be forced to acquire other less attractive spectrum, or to use only a limited amount of PCS spectrum to stay within the cap. It may drive up the price of alternative spectrum blocks, making them more expensive for those wireless carriers that want to use those alternative blocks. The cap's intrusion into the spectrum market thus impedes an efficiently functioning market.[17]

D. The Cap Undermines the Commission's Goals By Discriminating Between Mobile Services and Between Mobile and Fixed Services.

Apart from the obstacles it raises to the deployment of new services and the efficiency of wireless markets, the spectrum cap should be rescinded because it unjustifiably restricts ownership of spectrum used for only some but not other wireless services. Such unequal application of a rule cannot be reconciled with the

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17 The Commission's oversight of CMRS must "ensure that the marketplace – not the regulatory arena – shapes the development and delivery of mobile services." Implementation of Sections 3(n) and 332 of the Communications Act, Third Report and Order, 9 FCC Rcd 7988, 8002 (1994).

Commission's goals of converging mobile and fixed services and allowing market forces, not regulation, to determine which carriers and services succeed.

1. Unequal Regulation of Competing CMRS Providers. The spectrum cap rule, Section 20.6, states that providers of cellular, certain PCS services and certain SMR services are subject to the cap. But Section 20.9(a) lists eleven different wireless services that are "regulated as commercial mobile radio services." The Commission imposed the cap only on three of the eleven services on the ground that the other services either used small amounts of spectrum or were not likely to compete with cellular at that time. In the past four years, however, these rationales have largely disappeared. These services can deploy many of the new technologies that cellular, PCS and SMR carriers can deploy, directly competing with those carriers. For example:

> -- Wireless mobile data, one of the fastest-growing industry sectors, is the subject of vigorous competition between many types of CMRS providers that hold licenses in a wide variety of spectrum blocks. Narrowband PCS providers, land mobile systems, nationwide paging, and many other mobile providers compete with cellular and broadband PCS providers, yet they are outside the cap. There is no logical reason to discriminate among these providers of functionally similar data services by applying a spectrum cap only to some.
>
> -- Mobile satellite services, a futuristic mobile technology in 1994, are now becoming available to customers worldwide and use substantial amounts of spectrum. They will increasingly compete with cellular and PCS for business and other customers. Enforcing a cap against terrestrial mobile services, but not against satellite-delivered mobile services, is logically and legally indefensible.

-- Wireless Communication Service. WCS licensees under this service, created in 1997, can provide an unlimited variety of mobile and fixed services. But again, this new service was not subject to any cap.

Unequal Regulation of Mobile vs. Fixed Providers. The arbitrariness of a CMRS spectrum cap becomes even more glaring when it is placed next to the Commission's policy of flexible licensing of new services to provide fixed and/or mobile services. The Commission has encouraged cellular and broadband PCS carriers to begin offering fixed services through wireless local loop technology.[18] As carriers move into these markets, the line between "mobile" and "fixed" will blur. Providers will seek to attract subscribers by offering them "one-stop shopping" for all of their communications needs, whether they are in a fixed location or on the move. This is clearly desirable because it fosters development of new competition to local landline service. But regulation impairs, not fosters, this convergence.

As the fixed vs. mobile distinction evaporates in the market, however, the legitimacy of any ownership limit that is confined only to CMRS – and only three CMRS categories at that – also disappears. But the Commission has allocated spectrum to, and licensed, many new wireless services that are beginning to offer fixed wireless services armed with substantial spectrum, without being saddled

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18 The Commission has found that permitting CMRS providers to offer fixed services "will stimulate wireless competition in the local exchange market, encourage innovation and experimentation in development of wireless services and lead to a grater variety of service offerings to consumers." Amendment of the Commission's Rules to Permit Flexible Service Offerings in the Commercial Mobile Radio Services, 11 FCC Rcd 8965 (1997).

with any limits on how much they can acquire. For example, LMDS (the local multipoint distribution service) was created to provide new fixed video and other wireless services to consumers, but it was not included in the spectrum cap.

Regulatory symmetry is a basic principle in both the Communications Act and in Commission policy toward wireless services. Congress enacted Section 332 in part to abolish different regulatory regimes that had grown up around different mobile services, because it found, correctly, that disparate rules would distort markets and impair competition.[19] In its proceeding to implement Section 332, the Commission stated, "The broad goal of this action is to ensure that economic forces – not disparate regulatory burdens – shape the development of the CMRS marketplace."[20] The spectrum cap creates an asymmetrical market for spectrum that conflicts with the paradigm of allowing the free market to provide efficiently the communications services consumers want.

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19 H. Conf. Rep. 103-213, 103d Cong., 1st Sess. 493 (1993) (goal of amendments to Section 332 was to ensure that, "consistent with the public interest, similar services are accorded similar regulatory treatment").

20 Implementation of Sections 3(n) and 332 of the Communications Act, Third Report and Order, 9 FCC Rcd 7988, 7994 (1994). The objective was "to create a level playing field for CMRS," because consistent rules "will minimize the potentially distorting effects on the market of asymmetrical regulation.") Id. at 8004 (emphasis added).

VI. THE CURRENT SPECTRUM CAP SHOULD NOT BE REPLACED BY A MODIFIED RULE.

While there is no basis to retain the current rule, the Notice also asks whether a modified rule or alternative ownership limit should replace it. BAM opposes mere changes to the current rule that would leave in place limits on ownership or other interests in CMRS spectrum. Limits cannot be shown to achieve any of the goals the Notice identifies for the evolution of wireless services. Like the current cap, they may in fact undermine those goals by distorting the market for spectrum and interfering with carriers' ability to assemble the appropriate mix of spectrum to compete for customers and meet their customers' needs. Leaving any spectrum limit in place by tinkering with the current rule is no more justifiable than keeping the existing rule. It would have the same inherent flaws and will just as clearly fail to promote the Commission's CMRS policies.

Preventing Competitive Failure and Promoting New Entry. For the same reasons explained in Sections II and III of these Comments, no across-the-board rule is needed to guard against market failure or suppression of competition. The abundance of spectrum that has been allocated for wireless services, coupled with the Commission's ability to add more spectrum if necessary, minimizes any risk that any one competitor could amass (or even seek to amass) sufficient spectrum to acquire market power or foreclose competition. Nor will a modified rule achieve the goal of new entry, which has already been met. Traditional antitrust remedies

remain available as an additional safeguard in the unlikely event that problems arise in specific instances.

Promoting Service to Rural Areas. There is also no rational relationship between some modified ownership rule and the provision of new wireless service to rural areas. To justify the investment in new services, a CMRS provider must be able to project a certain revenue stream once it begins operation. In sparsely populated areas, it is simply more difficult to provide service economically. As Section IV explains, this reality would not be changed by an alternative ownership rule.

Retaining a narrower cap, in markets where there are as of yet fewer CMRS providers, also cannot be justified because there is no cause-and-effect relationship between such a rule and the goal it purportedly furthers. Imposing such a market-specific rule could, however, undercut this goal. Dr. Jackson explains that considerably more spectrum is likely to be needed to provide advanced services, including many clearly beneficial types of public safety data communications. That spectrum will be needed in all markets. Depriving carriers that capacity, simply because there are only a certain number of other competitors, could thus undercut, not promote, the offering of those advanced public safety and other services in rural markets.

Promoting Landline Competition and Advanced Services. Section V of these Comments explain why the current 45 MHz cap may prevent CMRS providers from

investing in the new technologies that will allow them to enter landline markets due to the increasing amounts of spectrum that will be needed. Given the pace of change in wireless broadband technology, any alternative cap would be arbitrary. BAM is aware of no evidence that would supply a reasoned basis to conclude that a CMRS carrier needs "only" 50 MHz, 60 MHz or some other amount to provide services that directly compete with landline services. Drs. Crandall and Gertner confirm that there is no certain way to identify how much spectrum is "enough" for innovative services, particularly those that would attract landline customers. Decl. at ¶ 64. If the Commission wants to encourage CMRS carriers to make the enormous investments that will be required to provide large numbers of customers with the kinds of services they are currently provided by landline technologies, it must get out of the way, not impose roadblocks.

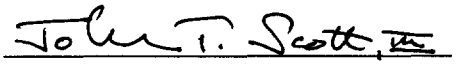
CONCLUSION

BAM urges the Commission to repeal the current spectrum cap. Rather than adopt any other ownership limit, it should do what it said it should do (and what the law compels): trust the market. There are ample alternatives already in place that effectively protect competition. A flat rule is clearly not needed and for that reason alone cannot legally be maintained, nor can any modified rule be imposed. Continuing any restraint on spectrum ownership would only restrain a competitive

industry's efforts to expand into new wireless markets, and would undermine the Commission's own goals for the future of CMRS.

Respectfully submitted,

BELL ATLANTIC MOBILE, INC.

By: 

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Dated: January 25, 1999

DECLARATION OF ROBERT W. CRANDALL AND ROBERT H. GERTNER

I. INTRODUCTION

1. My name is Robert W. Crandall. I am a Senior Fellow in Economic Studies at the Brookings Institution in Washington, D.C., a position that I have held since 1978. My areas of economic research are antitrust, the automobile industry, competitiveness, deregulation, environmental policy, industrial organization, industrial policy, mergers, regulation, the steel industry and telecommunications.

2. I have twice served in the federal government. I was Acting Deputy, Deputy Director, and Assistant Director of the Council on Wage and Price Stability in the Executive Office of the President. In 1974-75, I was an adviser to Commissioner Glen O. Robinson of the Federal Communications Commission.

3. I was an Assistant Professor and Associate Professor of Economics at the Massachusetts Institute of Technology between 1966 and 1974. I have also taught at George Washington University and the University of Maryland.

4. I have written widely on telecommunications policy, the economics of broadcasting, and the economics of cable television. I am the author or co-author of four books on communications policy published by the Brookings Institution since 1989: *Changing the Rules: Technological Change, International Competition, and Regulation in Communications,* with Kenneth Flamm (1989); *After the Breakup: U.S. Telecommunications in a More Competitive Era* (1991); *Talk is Cheap: the Promise of Regulatory Reform in North American Telecommunications,* with Leonard Waverman (1996): and *Cable TV: Regulation or Competition?,* with Harold Furchtgott-Roth (1996). In addition, I have published four other books on regulation and industrial organization with the Brookings Institution: *The Extra Mile: Rethinking Energy Policy for Automotive Transportation,* with Pietro S. Nivola (1995);

Manufacturing on the Move (1993); *Up from the Ashes: The U.S. Minimill Steel Industry,* with Donald F. Barnett (1986); and *Regulating the Automobile,* with Howard K. Gruenspecht, Theodore E. Keeler, and Lester B. Lave (1986). My work has been cited on numerous occasions by the federal judiciary and the FCC.

5. I have been a consultant on regulatory and antitrust matters to the Federal Communications Commission, to the Antitrust Division of the U.S. Department of Justice, to the Federal Trade Commission, to the Environmental Protection Agency, to the Canadian Competition Bureau, and to more than twenty companies in the telecommunications, cable television, broadcasting, and newspaper publishing industries.

6. I received an A.B. (1962) from the University of Cincinnati and a Ph.D. in economics (1968) from Northwestern University.

7. My name is Robert H. Gertner. I am Professor of Economics and Strategy at the Graduate School of Business of the University of Chicago, where I have been a member of the faculty since 1986. I am also a Principal and Vice President of Lexecon Inc., a law and economics consulting firm in Chicago. My research and teaching involves industrial organization (the study of individual markets which includes the study of antitrust, regulation, and business strategy), game theory (the formal study of strategic interdependence), law and economics, and corporate finance.

8. I have published articles on pricing and strategy in numerous economic journals, including the *Journal of Law and Economics,* the *RAND Journal of Economics,* the *Quarterly Journal of Economics,* and the *Journal of Finance.* I am co-editor of the *Journal of Business,* a leading journal that publishes academic research applying economics to business problems, and associate editor of the *Journal of Industrial Economics.* I am co-author of *Game Theory and the Law* (Harvard University Press 1994), a book that applies the modern tools of game theory and information economics to legal issues. I have taught courses at the University of Chicago in

competitive strategy, industrial organization, financial economics, corporate law, and antitrust law.

9. I have worked as a consultant on antitrust and other litigation issues as well as business strategy problems with major telecommunications firms. My consulting assignments with telecommunications companies include analyses of wireless issues.

10. I received an A.B. summa cum laude from Princeton University in 1981, where I majored in economics, and a Ph.D. from the Massachusetts Institute of Technology in 1986, also in economics.

11. In a recent Notice of Proposed Rule Making, the Federal Communications Commission ("the Commission") requested comments on whether it should retain the current 45 MHz Commercial Mobile Radio Services ("CMRS") "spectrum cap." We have been asked by counsel for Bell Atlantic Mobile ("Bell Atlantic") to analyze the economic costs and benefits of maintaining the spectrum cap. As we explain in this declaration, we find that the CMRS spectrum cap should be eliminated.

12. Current Commission policy consists of a fixed spectrum cap – 45 MHz is the maximum amount of CMRS spectrum that can be held in a geographic area by one firm. We believe that there is no economic basis for such a policy, and that the Commission's current spectrum cap likely reduces consumer welfare.

13. A spectrum cap can benefit consumers only if eliminating the cap would reduce competition. As we discuss in section II of this declaration, however, there is no basis for concern that eliminating the cap will lead to a reduction in competition. First, market evidence shows that competition in the wireless industry is robust and increasing. Second, market evidence also shows that an increase in the amount of spectrum held by one firm in an area is not associated with a reduction in competition in that area. Third, the exercise of market power is unlikely at levels above 45 MHz for a variety of reasons. Foreclosure is unlikely because of

the fact that additional spectrum can be auctioned by the FCC and because the FTC and DOJ can prevent foreclosure by enforcing antitrust laws. Finally, competition in the wireless industry is likely to increase in the future as more spectrum and new technologies become available.

14. Furthermore, as we discuss in section III, lifting the spectrum cap likely will benefit consumers. First, eliminating the spectrum cap may further increase competition between wireless and wireline services. Second, the current spectrum cap may prevent the creation and deployment of innovative wireless services – such as wireless broadband data services – that may require substantially more spectrum than is required for current services. Finally, eliminating the spectrum cap may allow the Commission to gain important new evidence on the optimal use of the electromagnetic spectrum.

II. LIFTING THE SPECTRUM CAP SHOULD NOT RAISE COMPETITION CONCERNS

15. Abolishing the spectrum cap should not raise concerns that competition will be reduced in the wireless industry for a variety of reasons. Increases in the availability of new spectrum over the last several years have created an industry in which competition is robust and increasing – the number of suppliers is increasing; substantial new wireless capacity is being added; and prices are falling. In this industry, there is no evidence that acquisitions of spectrum in an area by one firm up to the current spectrum-cap limit lead to a reduction in competition. Furthermore, although market evidence is not available on the effect of acquisitions of spectrum above the 45 MHz limit, there is no basis for concern that acquisitions of spectrum above the cap level will lead to reductions in competition. Finally, more spectrum is likely to become available in the future eliminating any incentive for carriers to acquire spectrum for anticompetitive purposes.

A. Competition in the CMRS Industry is Robust and Increasing

16. Our review of the economic evidence leads us to conclude that competition in the wireless industry is robust and increasing. First, the amount of spectrum available to industry participants has more than tripled in the last several years, and entrants continue to add capacity to serve customers. Second, prices in the industry have fallen dramatically in response to the increases in capacity and number of potential and actual competitors. Third, the CMRS industry is not highly concentrated.

1. The Number of Competitors in the CMRS Industry is Growing

17. Prior to 1993, no region of the country was served by more than two cellular carriers. In August 1993, a new firm, Nextel, began offering digital mobile telephone service in some parts of the country using a different portion of the electromagnetic spectrum (Nextel's service is referred to as "ESMR"). Beginning in 1995, the Commission began to auction additional spectrum for use in a new type of wireless service known as broadband "personal communications services" or "PCS". The first major PCS auction ("the A and B auction") was completed in March 1995; the second ("the C auction") and third ("the D, E and F auction") PCS auctions were completed in May 1996 and January 1997.

18. Winners of PCS licenses began to offer service in November 1995. By June of 1998, 87 percent of the U.S. population was served by three or more wireless providers, and over 68 percent of the U.S. population was served by four or more providers.[1] Furthermore, the number of competitors will continue to increase in the next few years as winners of the third

1. Federal Communications Commission, Third Annual CRMS Competition Report, FCC 98-91 ("Third Report"), at 18.

round of auctions begin to offer service. For example, Sprint PCS recently launched service in Jacksonville, Tampa, St. Petersburg, Atlanta, Chicago, Cincinnati, and Houston and is planning a rollout in Richmond and Orlando by early 1999.[2]

19. Prior to 1993, only 50 MHz of CMRS spectrum (25 MHz for each of two cellular providers) was available for the provision of wireless telephony services. Today, that amount has more than tripled to about 180 MHz (120 MHz for PCS services and about 10 MHz for ESMR providers). Furthermore, the effective capacity – that is, the amount of traffic that can be carried over the spectrum – has increased even more because of the advent of new digital technologies that make more efficient use of any given amount of spectrum.

20. We understand that given current digital technology, 10 MHz of spectrum is sufficient to allow a new wireless provider to compete effectively in almost any region of the country.[3] For example, we understand that digital PCS systems using code division multiple access ("CDMA") technology – the most efficient digital technology currently available – build their systems in units of capacity called "carriers." Each carrier requires approximately 2.5 MHz of spectrum plus adjacent "guard bands." Thus, a PCS provider can build three carriers in a 10 MHz block of spectrum. Initially, each provider builds out a single carrier, but as subscribers and peak-period usage expand, a second carrier is installed. We understand that PCS providers using CDMA technology in the A and B blocks, which were auctioned in 1995, are only now beginning to install second carriers for use in 1999. No carrier has begun to deploy a third carrier, and few are expected to do so in the foreseeable future.

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2. http://www.sprintpcs.com.
3. In this section of our declaration, we limit our discussion to wireless services currently being offered. As we discuss in the next section of our declaration, providing new wireless services efficiently may require more than 10 MHz of spectrum; indeed, providing such services may require more than 45 MHz of spectrum, which is why maintaining a spectrum cap may harm consumers.

21. Assuming that an average PCS subscriber uses 300 minutes per month, we understand that a three-carrier CDMA system in a medium-size city would be able to serve a subscriber base representing approximately 25 to 33 percent of the population.[4] Given that recent forecasts of wireless penetration by the year 2001 are generally between 38 and 43 percent of the population, a three-carrier CDMA system could potentially serve 73 percent of the expected CMRS demand in 2001 in such a city.[5] It is highly unlikely that a single wireless provider will be able to attract such a large share of potential demand because there will likely be between five and nine CMRS competitors in each metropolitan area. In smaller cities and rural areas, one firm that owned 10 MHz of spectrum likely could serve 100 percent or more of likely subscribers. This is more than sufficient capacity for a carrier to compete.

22. Our understanding is confirmed by market evidence. For example, many major wireless providers own only 10 MHz of spectrum, even in the largest cities in the country. Table 1 shows examples of major firms that hold only 10 MHz of spectrum in the top 50 MSAs in the United States. For example, AT&T owns only 10 MHz of spectrum in San Diego, Milwaukee, Indianapolis and four other top-50 MSAs. Sprint owns only 10 MHz in twelve of the 50 largest MSAs; Western Wireless and Omnipoint own 10 MHz in ten and three of the top 50 MSAs, respectively.

23. Large wireless operators are beginning to "build out" their systems in areas where they have only 10 MHz of spectrum (the 10 MHz auctions were not completed until January 1997). For example, we understand that U S WEST has 13 of its 54 planned 10 MHz systems in operation today. Sprint has five of its 115 planned systems in operation, and Omnipoint has three of its 31 planned systems in operation. Several major regions already have 10 MHz systems in operation, including Tampa-St. Petersburg, Atlanta and Houston.

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4. This calculation is based on the Richmond, Virginia MSA.
5. These forecasts are Yankee Group (37.9 percent); Paul Kagan (41.4 percent); Strategis

24. Nextel's experience also shows that 10 MHz is enough spectrum to allow a firm to compete effectively in the wireless industry. Nextel owns an average of roughly 10 MHz of spectrum in each area of the country in which it operates.[6] Nextel has become an important wireless operator, providing innovative services and pioneering the development of a uniform nationwide pricing plan. Figure 1 shows that Nextel now offers service that can reach 100 percent of the population in the ten largest MSAs; 90 percent of the population in the fifty largest MSAs; and over 81 percent of the population in the 100 largest MSAs.

25. Currently, at least seven firms own at least 10 MHz of spectrum in each MSA.[7] For example, eight firms own at least 10 MHz of spectrum in half of the MSAs in the United States. See Figure 2. Thus, there are (or likely will be) a substantial number of effective competitors in most MSAs in the country. Furthermore, if eliminating the spectrum cap leads to some reduction in the number of owners of 10 or more MHz of spectrum in an area, a substantial number of competitors likely will remain.

2. The Price of Wireless Services is Falling

26. The evidence shows that wireless entrants have undercut cellular prices aggressively, inducing large price reductions from the cellular firms. Furthermore, prices of cellular service are expected to continue to fall as PCS firms continue to start operations; indeed, the expected rate of decline in cellular prices has accelerated over the last few years. Figure 3 shows forecasts of cellular service prices (in constant-dollar revenue per minute of use)

(...continued)
(42.9 percent); and Dennis Leibowitz of Donaldson, Lufkin, and Jenrette (38.9 percent).

6. Nextel owns an average of roughly 14 MHz of spectrum in areas where it operates. However, we understand that for technological reasons Nextel's spectrum is roughly equivalent to a 10 MHz PCS block of spectrum. For this reason, our analysis assumes that 180 MHz of spectrum is currently available for wireless telephony (50 MHz for cellular; 120 MHz for PCS; and 10 for ESMR).
7. This analysis assumes that Bell Atlantic and GTE are one firm.

prepared by Donaldson, Lufkin & Jenrette ("DLJ"). DLJ expects cellular prices to continue declining rapidly over the next several years. A comparison of DLJ's 1996 and 1998 forecasts shows that cellular prices have fallen more rapidly than was expected two years ago.[8]

27. We also investigate the extent to which the decline in cellular prices is related to the availability of PCS service in an area. We analyze the determinants of cellular prices in an MSA with a series of multiple regression models. A multiple regression model is a widely used statistical technique that allows an analyst to investigate the extent to which a variable of interest – in this case, the price of cellular service in an MSA – is associated with one or more "explanatory" variables – in this case, the presence of PCS service in an MSA.

28. We rely on cellular price information collected by Paul Kagan and Associates. For each of the top 100 MSAs, Kagan reports, for each cellular provider, the lowest available price (i.e., a price that reflects available promotions) at a variety of usage levels – 30, 100, 300, 500, 750 and 1000 minutes of use ("MOUs"). The unit of observation for our analysis is an MSA. We calculate the cellular price in each MSA for each level of usage as the simple average of the two cellular providers' prices.[9]

29. We regress the logarithm of each level of usage price (i.e., we estimate a series of six regressions, one for each level of usage) on a set of demographic variables; dummy variables that indicate whether Nextel offers service in an area; and a set of dummy variables that indicate whether one or more PCS firms offer service in the MSA; two or more PCS firms offer service in the MSA; or three PCS firms offer service in the MSA.[10] Our results are

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8. Appendix Table 1 shows cellular prices for the top 50 MSAs in 1996 and 1998. In almost every case, prices fell substantially over the two-year period.
9. In some MSAs, different analog and digital prices are reported for some providers. For these firms, we assume that the price offered is a simple average of the analog and digital prices.
10. The price data are from March 1998. As of that date, none of the top 100 MSAs had more than three PCS providers. Our results are based on Ordinary Least Squares models. We have not yet attempted to control for possible endogeneity in our models.

summarized in Table 2. With the exception of the lowest level of usage, we find that the presence of one or more PCS providers is associated with statistically significant lower cellular prices. For example, at 300 MOUs, the presence of one or more PCS providers is associated with a reduction in cellular prices of about 17.9 percent. However, we find no evidence that a second or third PCS provider lowers cellular prices further – the coefficients on the second two PCS dummies (which measure the incremental impact of a second or third PCS provider) are not negative and statistically significant for any of the six usage levels.

30. We next investigate the extent to which the reduction in cellular prices is related to the length of time that PCS service has been available in an MSA. We repeat our regression analyses, but replace the PCS dummies with a series of variables that measure the length of time (in months) that PCS service has been available in an MSA. Table 3 summarizes our results. We find that the cellular prices are lowest (all else equal) in MSAs in which PCS service has been available for the longest time. However, we again find no evidence that the presence of a second or third PCS provider further reduces cellular prices. These results suggest that a third carrier (in a market subject to further entry) has been sufficient to provide competition with the existing cellular carriers.

3. The Wireless Industry is not Highly Concentrated

31. Because the wireless industry is rapidly evolving, it is difficult to measure "market concentration" in an economically meaningful way. However, market evidence shows that two common measures of concentration – those based on "revenue share" or "capacity share" – are inappropriate. We conclude that a more appropriate measure of concentration should be based on the number of firms in each area that own 10 or more MHz of spectrum. Based on this more appropriate measure, no MSA in the country is "highly concentrated" using the standard

articulated in the Horizontal Merger Guidelines of the Department of Justice and Federal Trade Commission ("Merger Guidelines").

32. Current revenue shares are an inappropriate basis for measuring concentration because a firm's current share does not reflect its likely future competitive significance. As we have explained, wireless prices have fallen substantially over the last few years as Nextel and PCS firms began to offer service. However, the revenue shares of these firms often are small. For example, the oldest non-cellular carrier, Nextel, had a 2.16% share of national wireless revenue in 1997.[11] Indeed, prices have fallen in areas even before PCS service became available in that area. This evidence shows that current revenue shares do not accurately reflect entrants' likely competitive significance in the future.

33. Capacity shares (i.e., shares of spectrum) also are an inappropriate basis for measuring concentration because the use of spectrum shares implies that all technologies employed in the wireless industry are equally efficient. However, digital technology (used by PCS, ESMR and some cellular providers) makes substantially more efficient use of a given amount of spectrum than analog technology (used by cellular firms). For example, industry analysts have estimated that digital technology can carry six times as much voice traffic over the same amount of spectrum as analog technology.[12] Furthermore, differences in spectral efficiency exist across different digital technologies. For example, we understand that Qualcomm's CDMA technology is more efficient than AT&T's time division multiple access ("TDMA") technology.

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11. Based on 1997 wireless revenues as reported in Telecommunications Industry Revenue: 1997 (FCC), and Nextel's 1997 10-K.
12. For example, with 1.25 MHz as a reference bandwidth with omni-directional cells, AMPS can support six channels; GSM has about 2.8 times as much capacity; and CDMA about ten times greater capacity. See Rajan Kuruppillai, Mahi Dontamsetti and Fil J. Consentino, Wireless PCS 289-90 (McGraw-Hill 1997) ("Wireless PCS").

34. As we have explained, given current technology, one 10 MHz block of spectrum is sufficient for a wireless provider to compete effectively. Therefore, a more appropriate measure of market concentration is based on the number of firms in an area that have licenses for 10 MHz of spectrum. If, for example, eight firms in an area own 10 MHz of spectrum, then a more appropriate measure of concentration would treat each firm as a potentially equally effective competitor, and the area's Herfindahl-Herschman Index ("HHI"), a common measure of concentration, would equal 1,250. That is, each firm would have a 1/8 share, or 12.5 percent. An HHI is calculated by squaring each firm's share and summing the squared shares. In this case, 12.5 squared equals 156.25, and eight times 156.25 equals 1,250. Because the number of firms owing 10 MHz in an MSA varies between six and nine, the HHI in each MSA varies between 1,111 and 1,667. The Merger Guidelines characterize industries with HHIs between 1,000 and 1,800 as "moderately concentrated"; industries with HHIs above 1,800 are "highly concentrated."

35. However, even this measure of concentration can be misleading. In a dynamic environment like the wireless industry, suppose that a new technology is developed that requires the use of 55 MHz of spectrum in an area. If the spectrum cap is lifted, and one firm acquires 55 MHz of spectrum in order to provide this new service, measured concentration may increase. For example, suppose that there are currently eight owners of at least 10 MHz of spectrum in an area. If the spectrum cap is lifted and one firm increases its holdings to 55 MHz, the number of owners of at least 10 MHz of spectrum may decline to seven. In this example, the measured HHI increases from 1,250 to 1,429. However, it is not appropriate to compare the two HHIs and conclude that the increase in concentration reflects a potential reduction in competition – because the increase in HHI is associated with the introduction of a new service that may be of great value to consumers, "all else" is not equal. Thus, it would be inappropriate to conclude that the measured increase in HHI reflects a reduction in competition.

36. The danger of comparing HHIs in a dynamic industry arises in many situations. For example, suppose that there are two rivals in an industry, each selling 50 units. Then the HHI for the industry is 5,000 (i.e., each firm has 50 percent of sales, and 50 squared plus 50 squared equals 5,000). Now suppose that one of the rivals increases its capacity and sales to 100 units, while the second firm maintains its sales of 50 units. Then the industry HHI increases to 5,556 (i.e., 66.7 squared plus 33.3 squared). But this increase in concentration is associated with an increase in industry output – i.e., a procompetitive outcome – and so cannot reflect a reduction in competition.

B. The Exercise of Market Power is Unlikely at Levels Above 45 Mhz

37. There are two reasons why the Commission may be concerned that lifting the spectrum cap may reduce competition in wireless markets: "market foreclosure" and "coordinated interaction." We believe that both potential concerns are unfounded. First, a large amount of spectrum likely will remain for competitors even if one or more firms acquires more than 45 MHz of spectrum in an area, so that foreclosure of rivals is unlikely. Second, with respect to coordinated interaction, we find that conditions in the wireless industry are not conducive to coordination. Finally, if future acquisitions of spectrum over the current spectrum cap by a firm in one or more areas were likely to reduce competition, such anticompetitive conduct could be prevented by the usual application of the antitrust laws by the Department of Justice or Federal Trade Commission or by an increase in spectrum allocated to CMRS by the Commission.

1. Foreclosure of Competition is Unlikely

38. As we have explained, a wireless firm can compete effectively with 10 MHz of spectrum. Thus, even if one firm were to acquire, for example, 60 MHz of spectrum, the

remaining 120 MHz of spectrum could support a substantial number of effective competitors, each with sufficient capacity to serve a large fraction of the market. Because of the "buildout" requirements associated with PCS licenses, firms that own spectrum are required to add capacity over the next several years – the future addition of new capacity in this industry thus is not merely hypothetical.

39. Furthermore, the same amount of spectrum is available in every part of the country, even though likely demand varies tremendously across parts of the country. In particular, total demand for wireless services likely will be substantially smaller in relatively less densely populated areas than in the most heavily populated parts of the country. Thus, the likelihood of foreclosure is especially remote in relatively less densely populated areas. Moreover, the Commission can increase spectrum for CMRS and others can move spectrum to CMRS uses, thereby thwarting any attempt at foreclosure.

2. Coordinated Interaction Among Wireless Providers is Unlikely

40. The characteristics of the wireless telephony industry are not conducive to interaction. Most importantly, the wireless industry consists of cellular providers that have been offering service for 10 or more years, and PCS and other firms that have only recently begun to offer wireless service or have not yet started offering service. Because the recent (and future) entrants account for small (or zero) shares of wireless customers, these firms do not have an economic incentive to "coordinate" with the established cellular firms. Indeed, firms in this industry with small (or zero) shares have an incentive to charge substantially lower prices than the incumbent firms in an attempt to gain share because the wireless industry is characterized by high fixed costs and low marginal costs. As we have discussed, the entry of PCS providers has lead to substantial declines in incumbents' prices.

41. In addition to the difference in shares between cellular and other wireless providers, wireless firms differ in a variety of other ways. For example, some wireless providers offer "one-rate" national pricing, while others have chosen regional instead of national pricing strategies. Nextel, a "maverick" firm, introduced a "no roaming" plan in January 1997. Established providers have responded to Nextel's innovation. Sprint responded with its national plan in September 1997; AT&T followed suit in May 1998. Bell Atlantic and AirTouch also began to offer single-rate plans in September 1998.

42. Some providers also offer wireless service in combination with other products. For example, Sprint offers wireless service "bundled" with long-distance service. Furthermore, because wireless pricing is unregulated, firms can – and do – offer a wide variety of pricing promotions, making prices difficult to monitor and impossible to coordinate.

43. Wireless providers also differ in the technology that they utilize. For example, existing cellular providers have greater need for spectrum than a startup PCS or SMR provider because of analog "legacy" customers. And, as we have discussed, PCS and SMR firms use different digital technologies.

44. Finally, market information for the wireless industry is not readily available. For example, no public information on subscribers or usage is available. This lack of market information is another characteristic of the wireless industry that is not conducive to coordination.

3. Anticompetitive Acquisitions of Spectrum Can be Prevented by the Commission and U.S. Antitrust Authorities

45. It is possible that at some level of spectrum holdings, acquisitions of further spectrum by one or more firms in an area could reduce competition substantially. However, there are other policy tools available to prevent the exercise of market power in the CMRS

market that have lower social costs than the spectrum cap. Mergers and other conduct can be reviewed on a case by case basis by U.S. antitrust authorities. In addition, the FCC can auction off additional spectrum.

46. The Department of Justice and Federal Trade Commission routinely evaluate proposed mergers and acquisitions for possible anticompetitive effect. If the accumulation of spectrum by one or more firms in one or more areas raises competition concerns, these concerns should be addressed on a case-by-case basis using existing antitrust mechanisms.

47. Finally, even if a firm were to evade the safeguards of the Department of Justice and Federal Trade Commission, and succeed in foreclosing competition by accumulating all or most of the available spectrum, the FCC could defeat this strategy by simply auctioning more CMRS spectrum. Such a strategy would be foolhardy to pursue given the investments required and the ease with which it could be defeated. As a result, it is unlikely even to be attempted.

48. Case-by-case analyses are regularly performed by the Commission and the antitrust authorities. They allow greater flexibility than the "one-size fits all" spectrum cap and are sufficient to prevent anticompetitive harm. Also, as we discuss in the next section of our declaration, there likely are consumer benefits associated with eliminating the spectrum cap.

C. More Competition is Likely in the Future

49. Our analysis is based on the assumption that wireless services can be provided only by current holders of cellular, PCS or ESMR licenses. However, this assumption likely is conservative for a variety of reasons – the amount of spectrum potentially available to wireless competitors could increase substantially beyond the current roughly 180 MHz of cellular, PCS and ESMR spectrum. First, more spectrum is likely to become available in the future. The Commission will be holding further auctions of spectrum that could potentially be used to provide mobile telephony. Second, the Commission also could expand the total CMRS and SMR

spectrum by relocating some public-safety users to the 138-144 MHz band.[13] Third, technological progress is developing substitutes for conventional CMRS, such as two-way paging and satellite services. Thus, capacity and competition in the wireless industry is likely to increase in the future.

III. LIFTING THE SPECTRUM CAP MAY PROVIDE SUBSTANTIAL CONSUMER BENEFITS

A. The Spectrum Cap May Constrain CMRS in Competing with Wireline Services

50. In implementing the 1996 Telecommunications Act, the Commission has been aggressively pursuing policies to open local telecommunications markets to competition. This goal may be achieved through the entry of new carriers using wireline or wireless technologies, but most of the Commission's attention has been devoted to policies designed to induce entry from resellers of wireline services or new facilities-based wireline carriers. Until recently, CMRS had not appeared to be a potential source of competition for incumbent local exchange carriers ("ILECs"). Given recent developments, however, the Commission should clearly view CMRS as becoming a more significant source of competition for ILECs and consider the role of the spectrum cap in the achievement of CMRS-ILEC competition.

51. As long as CMRS services were priced at 50 cents per minute or more, they were not viewed as close substitutes for local wireline services by many consumers. But technological progress, new entry from PCS providers, and lower interconnection rates have driven the price of CMRS service to as little as 10 cents per minute for all calls – local and long

13. See for example Federal Communications Commission First Report and Order and Third Notice of Proposed Rulemaking in the Matter of The Development of Operational, Technical and Spectrum Requirements For Meeting Federal, State and Local Public Safety Agency Communication Requirements Through the Year 2010, September 29, 1998, at 192.

distance – with no roaming charges. At these prices, CMRS service is clearly looming as a source of competition for wireline services.

52. CMRS carriers are now starting to market their services as a substitute for landline services. In late 1998, AT&T began a trial in Plano, Texas with its digital wireless service. A new pricing plan offering unlimited local calls, caller ID, and voice mail for a flat rate was introduced and marketed as a substitute for a second residential or small-business line. Such a service, if widely subscribed, could place substantial burdens on AT&T's capacity in Plano – particularly if it is used intensively for Internet connections or other services during peak hours.

53. Unfortunately, the 45 MHZ spectrum cap could be a serious constraint on the development of CMRS-wireline competition for carriers with an inherited analog cellular customer base. Such carriers are limited to 20 MHz of non-cellular band spectrum, which is likely to be more than sufficient to compete in the CMRS market offering only voice and low-speed data services but may not be sufficient to compete with wireline services while offering the traditional CMRS services as well. Given that the potential for CMRS-wireline competition has only arisen very recently, there is little market evidence that the spectrum cap is a serious constraint. However, as CMRS rates continue to decline, the spectrum cap could provide a severe limitation on CMRS-wireline competition.

54. As CATV companies begin to deploy cable modem services to provide subscribers with higher-speed Internet connections, CMRS providers will have to respond with higher-bandwidth services if they are to compete with the incumbent CATV companies. The increase in Internet demand has increased average call lengths among wireline subscribers. A similar effect in wireless will require more bandwidth simply to handle the increased volumes[14], even without considering the bandwidth required to handle streaming video or other data

intensive applications. This comparison raises another point that is important to the spectrum cap. Although Internet subscribers generally use dial-up modems, there is a great demand for higher bandwidth. Some customers will be satisfied with wireless Internet connections comparable to a typical phone line, but most will want more capacity. The increased usage alone will place a strain upon the available spectrum, but the demand for increased bandwidth combined with higher usage will make the spectrum cap binding.

55. Various organizations, including the Public Safety Wireless Advisory Commission and the Land Mobile Communications Council, have also identified increasing needs for wireless high speed data transmission and other broadband applications.[15]

56. These new services will face their greatest constraints in densely populated areas – the very areas where such services are typically demanded and developed to allow the spreading of fixed development and deployment costs over a greater number of customers. Easing the constraints by removing the spectrum cap will also benefit less densely populated rural areas as the services first developed for congested areas are made available throughout the country, including in rural areas.

B. Technological Innovation

57. When the spectrum cap was initially implemented in 1994, CMRS services were still largely voice and narrowband data services provided by two analog cellular carriers in each local market. These carriers had limited capacity because of their analog technology and their access to only 25 MHz of spectrum. Although cellular service was already 11 years old, innovations were relatively limited because of the absence of competitive entry and the cellular carriers' limited spectrum.

(...continued)
14. See Declaration of Charles Jackson at 10.

58. As the Commission faced the auctioning of new spectrum for CMRS – the PCS spectrum – it was concerned principally with assuring that the existing cellular carriers would not appropriate a large share of this new spectrum to forestall competition in offering the traditional CMRS voice and narrowband data services. The Commission anticipated that the first of these new 30 MHz bands would be used principally to compete with the existing cellular carriers, thereby expanding output of the traditional wireless services and driving down their prices. As a result, it established the spectrum cap at 45 MHz, assuring that no existing cellular carrier, with 25 MHz, could obtain a new 30 MHz block of PCS spectrum in the same geographical market.

59. Now, more than four years after the promulgation of the spectrum cap, competition among CMRS providers is a certainty. As we have shown, a competitive carrier needs but 10 MHz to compete in offering traditional CMRS, but there is now at least 180 MHz available for these services. The Commission's goal of competition has been achieved, and the spectrum cap is not required to insure that such competition is preserved. In fact, as the newest D, E, and F blocks are built out, this competition is likely to intensify substantially.

60. Unfortunately, the spectrum cap may be more than redundant; it may actually inhibit the development of new services. When the Commission was devising the spectrum cap, the Internet was still in a rather early stage of development. The newest, most efficient CMRS technologies, such as CDMA, were unproven. National, no-roaming CMRS plans did not exist. Total CMRS subscribers at the end of 1993 were 16 million – about one-fourth of the current number – and a large share of these subscribers used the service principally in their motor vehicles. Lap-top computers were much more expensive and less likely to be used a portable communications devices. In short, the world in which CMRS providers operate has changed dramatically with consequences for wireless-services innovation that no one can clearly foresee.

(...continued)
15. See Declaration of Charles Jackson at 18 to 22.

With CMRS providers limited to 45 MHz of spectrum in each geographic area, wireless innovation may be severely constrained.

61. We have identified one major constraint that the current spectrum cap imposes – the limitation on the ability of carriers with an installed analog base to develop services to compete with existing wireline services. In an accompanying declaration, Charles Jackson discusses potentially new wireless services that might emerge if the cap were lifted. Obviously, such a forecast is difficult to make because there is no market evidence on the cost of or the demand for such services. Given the blinding speed of innovation in the underlying technologies, it is simply impossible to foresee all the new market applications.

62. One possible result of eliminating the spectrum cap would be the development of new CMRS bands by existing service providers. Under the Commission's current rules, many non-broadcast spectrum bands can be utilized for a variety of commercial purposes at the discretion of the licensees. For example, bands allocated to MMDS, ESMR, or NII services could be shifted to traditional or new CMRS. If these bands were made subject to the CMRS spectrum cap those service providers who already hold licenses for 25 MHz of cellular spectrum and 10 or 20 MHz of other PCS spectrum in many geographic areas would be unable to use them for CMRS use because they would violate the Commission's spectrum cap. With the larger current wireless companies so constrained, it is possible that no one would commit the capital to develop these services in these new bands, including the capital required to build the requisite transmission and receiving equipment. These services are typically developed in high density areas where companies can rapidly amortize their investments and then deployed throughout the network. A spectrum constraint in high density areas lowers the returns, and thus the incentives, to developing new services which would otherwise benefit the entire nation, including lower density rural areas.

C. Removing the Cap Could Provide the Commission with Valuable Information

63. In the rapidly changing current environment, the Commission cannot know how much spectrum could be effectively utilized by commercial wireless services companies to offer existing or new services. To its credit, the Commission has begun to allow licensees to develop spectrum bands for their highest-valued uses. It is for this reason that an ESMR licensee, Nextel, today provides innovative services and pricing plans in competition with older, traditional wireless carriers. The Commission should extend this philosophy to the choice of spectrum aggregation by CMRS providers. There is no way that the Commission can know whether 10 MHz, 30 MHz, or 45 MHz is "enough" to deliver innovative, competitive wireless services.

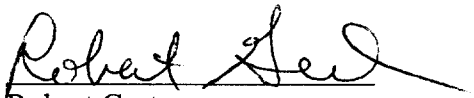
64. Were it to abandon the spectrum cap, the Commission could gain important new evidence on the optimal use of the electromagnetic spectrum. If several companies began accumulating 50 MHZ or more in most major markets, the Commission would be on notice that its decisions to keep to 10, 25, and 30 MHz bands have proven to be insufficient for changing technology and anticipated market demands. Far from being concerned that such accumulation of spectrum is a "threat" to competition, the Commission would then be induced to investigate the possibility of expanding the amount of CMRS spectrum available or encouraging the shift of other spectrum to CMRS uses.

I, Robert Crandall, hereby declare under penalty of perjury under the laws of the United States that the foregoing is true and correct.

Robert Crandall

Dated: January 25, 1999

I, Robert Gertner, hereby declare under penalty of perjury under the laws of the United States that the foregoing is true and correct.



Robert Gertner

Dated: January 25, 1999